

Claims

1. A photothermal conversion spectroscopic analysis method of analyzing a sample, comprising irradiating exciting light and detecting light via an irradiation lens, detecting the detecting light passing through a thermal lens generated by the sample onto which the exciting light has been irradiated, and wherein the exciting light and the detecting light are guided in a single mode to the irradiation lens via an optical wave guide path.

2. A microchemical system comprising:
an exciting light source that outputs exciting light,
a detecting light source that outputs detecting light,
a guide optical system that guides the exciting light and the detecting light together,
an irradiation lens that irradiates the exciting light and the detecting light guided by said guide optical system onto a sample,

detecting means for detecting the detecting light passing through a thermal lens generated by the sample on which the exciting light has been irradiated,

analysis means for analyzing the sample based on the detected detecting light, and

an optical unit in which said guide optical system and said irradiation lens are disposed, said optical unit having an

optical waveguide path as an optical path of said guide optical system.

3. A microchemical system as claimed in claim 2, wherein said irradiation lens is fixed to an end of the optical waveguide path through which the exciting light and the detecting light are output.

4. A microchemical system as claimed in claim 3, wherein the detecting light has a different frequency from that of the exciting light, and said irradiation lens has a chromatic aberration.

5. A microchemical system as claimed in claim 2, wherein the detecting light has a different frequency from that of the exciting light, and said irradiation lens has a chromatic aberration.

6. A microchemical system as claimed in any one of claims 2 to 5, wherein said irradiation lens comprises a gradient refractive index lens.

7. A microchemical system as claimed in claim 6, wherein said gradient refractive index lens is a solid-cylindrical rod lens.

8. A microchemical system as claimed in any one of claims 2 to 5, wherein the optical wave guide path transmits the exciting light and the detecting light in a single mode.

9. A microchemical system as claimed in any one of claims 2 to 5, wherein said optical unit comprises a light source for the exciting light and a light source for the detecting light.

10. A microchemical system as claimed in any one of claims 2 to 5, wherein:

said optical unit comprises a channel disposed downstream of said irradiation lens in a direction of travel of the exciting light and the detecting light and through which a liquid containing the sample flows, and

said detecting means is disposed downstream of the channel in the direction of travel of the exciting light and the detecting light.

11. A microchemical system as claimed in any one of claims 2 to 5, further comprising a channel-formed plate-shaped element disposed between the optical unit and the detecting means and having a channel through which a liquid containing the sample flows.

12. A microchemical system as claimed in claim 11, further comprising a parallel moving mechanism that moves said optical unit and said detecting means in parallel with a surface of said channel-formed plate-shaped element while maintaining relative positions of said optical unit and said detecting means.